AMENDMENTS TO THE CLAIMS:

Please cancel claims 10-12, 18-20 and 22-23 without prejudice or disclaimer.

1. (Currently amended) An apparatus for data compression comprising:

      an identifier which identifies a plurality of irredundant patterns in a data set; and

      an extractor which extracts at least a portion of said plurality of irredundant patterns from said data set to generate a compressed data set,

      <u>wherein said identifier identifies said plurality of irredundant patterns according to an irredundant pattern discovery algorithm, and</u>

      <u>wherein said irredundant pattern discovery algorithm comprises:</u>

            <u>initializing a set of irredundant patterns in said data set;</u>

            <u>constructing said set of irredundant patterns for each solid character;</u>

            <u>constructing location lists for said set of irredundant patterns, said set of irredundant patterns being iteratively adjusted based on said location lists until no further changes occur to said set of irredundant patterns; and</u>

            <u>updating said set of irredundant patterns.</u>

2. (Original) The apparatus according to claim 1, wherein a more frequently occurring irredundant pattern is extracted before a less frequently occurring irredundant pattern.

3. (Original) The apparatus according to claim 1, further comprising:

      an ordering device which orders said plurality of irredundant patterns according to a frequency of occurrence in said data set.

4. (Original) The apparatus according to claim 1, further comprising:

      an input for inputting said data set; and an output for outputting said compressed data set.

5. (Original) The apparatus according to claim 1, wherein said at least a portion of said plurality of irredundant patterns extracted from said data set comprise irredundant patterns

having a minumum frequency of occurrence.

6. (Original) The apparatus according to claim 1, wherein an irredundant pattern in said

plurality of irredundant patterns comprises a maximal motif, said maximal motif and a

location list of occurrences for said maximal motif being incapable of being deduced by a

union of a number of location lists of other maximal motifs.

7. (Original) The apparatus according to claim 6, wherein said maximal motif is maximal in

composition and maximal in length.

8. (Original) The apparatus according to claim 6, wherein said maximal motif is devoid of a

don't care character.

9. (Original) The apparatus according to claim 1, wherein said data set comprises one of a

character string and a character array.

10-12. (Canceled)

13. (Currently amended) The apparatus according to claim 1 [[10]], further comprising:

         an input for inputting parameters for said irredundant pattern discovery algorithm,

said parameters comprising a string length for said data set, a minimum number of times said

irredundant pattern must appear in said data set to be extracted, and a maximum number of

consecutive don't care characters allowed in said irredundant pattern.

14. (Original) The apparatus according to claim 1, wherein said data set comprises one of

image data, text data, music data and genetic sequence data.

15. (Original) The apparatus according to claim 1, wherein said identifier and said extractor

comprise a same device.

16. (Original) A facsimile machine comprising the apparatus according to claim 1.

17. (Original) A computer comprising the apparatus of claim 1.

18-20. (Canceled)

21. (Original) A data compression/decompression system, comprising:

      the data compression apparatus according to claim 1; and

      a data decompression apparatus comprising:

            an identifier which identifies said irredundant patterns extracted from said data set in said data compression apparatus; and

            an inserter for inserting said extracted irredundant patterns from said data set, into said compressed data set, to reproduce said data set.

22-23. (Canceled)

24. (Currently amended) A programmable storage medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform a method of data compression, said method comprising:

      identifying a plurality of irredundant patterns in a data set; and

      extracting at least a portion of said plurality of irredundant patterns from said data set to generate a compressed data set,

      wherein said identifying said plurality of irredundant patterns comprises identifying said plurality of irredundant patterns according to an irredundant pattern discovery algorithm, and

      wherein said irredundant pattern discovery algorithm comprises:

            initializing a set of irredundant patterns in said data set;

            constructing said set of irredundant patterns for each solid character;

            constructing location lists for said set of irredundant patterns, said set of irredundant patterns being iteratively adjusted based on said location lists until no further changes occur to said set of irredundant patterns; and

            updating said set of irredundant patterns.

25. (Currently amended) A method for deploying computing infrastructure in which computer-readable code is integrated into a computing system, and combines with said computing system to perform a method of data compression, said method of data compression comprising:

identifying a plurality of irredundant patterns in a data set; and

extracting at least a portion of said plurality of irredundant patterns from said data set to generate a compressed data set,

wherein said identifying said plurality of irredundant patterns comprises identifying said plurality of irredundant patterns according to an irredundant pattern discovery algorithm, and

wherein said irredundant pattern discovery algorithm comprises:

initializing a set of irredundant patterns in said data set;

constructing said set of irredundant patterns for each solid character;

constructing location lists for said set of irredundant patterns, said set of irredundant patterns being iteratively adjusted based on said location lists until no further changes occur to said set of irredundant patterns; and

updating said set of irredundant patterns.